

TEMPERATURE-CONTROLLED CHUCK WITH RECOVERY OF CIRCULATING
TEMPERATURE CONTROL FLUID

Abstract of the Disclosure

A system and method for controlling temperature in a workpiece chuck are described. A fluid circulation system circulates a temperature control fluid, such as an engineered HFE fluid, through the workpiece chuck. A fluid recovery system coupled to the fluid circulation system recovers a portion of the temperature control fluid from the fluid circulation system by circulating a gas through the fluid circulation system including fluid tubes and fluid passages in the chuck. The gas, which can be air, carries a portion of residual or excess fluid through the fluid circulation system as it is circulated. The residual fluid is carried back to a reservoir such that it can continue to be used to control temperature of the chuck. Where gas and temperature control fluid vapors are displaced from the reservoir, they are routed through a suction line heat exchanger which condenses the vapor. The gas and condensed fluid are separated in a fluid separator. The separated fluid is returned to the reservoir, and the separated air can be vented to the atmosphere.

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